

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for releasing a microstructure for fabricating a device of a micro electro mechanical system (MEMS), comprising:
 - supplying bubbled alcohol vapor as a catalyst with anhydrous HF;
 - maintaining a temperature of the supplying device and a moving path of the anhydrous HF and the alcohol to be higher than a boiling point of the alcohol;
 - performing a vapor etching by controlling a temperature and a pressure to be within the vapor region of a phase equilibrium diagram of water, thereby removing silicon oxide of a sacrificial layer on a lower portion of the microstructure,
~~wherein the vapor etching via a slow gas-solid reaction is controlled by formation of HF₂, resulted from ionization reaction between anhydrous HF and alcoholic vapor adsorbed physically on the silicon oxide surface, while the vapor etching is performed under a total pressure of an etching chamber ranged from about 25 torr to about 75 torr and a temperature of a substrate ranged from about 25°C to about 75°C, and a temperature inside of the etching chamber is maintained to be higher than that of the substrate so as to discharge the water generated during the vapor etching without condensation.~~
2. (Currently Amended) The method of claim 1, wherein the vapor etching is performed under a pressure ranged to be 25-75 torr, anhydrous HF partial pressure is 2-50 torr, and alcoholic vapor partial pressure is 0.1-10 torr.
3. (Currently Amended) The method of claim 1, wherein the vapor etching is performed under a condition that a wafer temperature ranges 25-75°C so as to increase physical adsorption amounts of reactant molecules adsorbed on the silicon oxide surface and an etching chamber temperature ranges 25-80°C so as to discharge the gas without condensing the water.
4. (Original) The method of claim 1, wherein a step of performing a wet etching of a part of the silicon oxide precedes the step of performing the vapor etching.

5. (Original) The method of claim 1, wherein the silicon oxide of a sacrificial layer is any one component selected from the group consisting of TEOS, LTO, PSG, BPSG and a thermal silicon oxide.

6. (Original) The method of claim 1, wherein the alcohol is any one component selected from the group consisting of methanol, isopropyl alcohol and ethanol.

7. (Original) The method of claim 1, wherein the MEMS device has a laminated layer structure or a monocrystal silicon structure.

8. (Currently Amended) A method for removing silicon oxide of a sacrificial layer for a microstructure in a MEMS device, comprising:

removing the silicon oxide of a sacrificial layer by performing a vapor etching using anhydrous ~~HG-HF~~ and alcohol by controlling a temperature and a pressure inside of an etching chamber to be within the region of a vapor of a phase equilibrium diagram of water,

wherein the vapor etching is performed under a total pressure of an etching chamber ranged from about 25 torr to about 75 torr and a temperature of a substrate ranged from about 25°C to about 75°C, and a temperature inside of the etching chamber is maintained to be higher than that of the substrate so as to discharge the gaswater generated during the vapor etching without condensation ~~the water and to control physical adsorption amounts of reactant molecules adsorbed on the sacrificial layer.~~

Claim 9 (Cancelled)

10. (Original) The method of claim 8, wherein the temperature inside of the etching chamber is ranged to be 25-80°C.